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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,652	04/16/2004	Frank Ruggieri	PC-1705	2141

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EXAMINER

WAKS, JOSEPH

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 03/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/826,652

Applicant(s)

RUGGIERI ET AL

Examiner

Joseph Waks

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 April 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 0404.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings were received on July 6, 2004. These drawings are not accepted.

INFORMATION ON HOW TO EFFECT DRAWING CHANGES

Replacement Drawing Sheets

Drawing changes must be made by presenting replacement sheets which incorporate the desired changes and which comply with 37 CFR 1.84. An explanation of the changes made must be presented either in the drawing amendments section, or remarks, section of the amendment paper. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). A replacement sheet must include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of the amended drawing(s) must not be labeled as "amended." If the changes to the drawing figure(s) are not accepted by the examiner, applicant will be notified of any required corrective action in the next Office action. No further drawing submission will be required, unless applicant is notified.

Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and centered within the top margin.

Annotated Drawing Sheets

A marked-up copy of any amended drawing figure, including annotations indicating the changes made, may be submitted or required by the examiner. The annotated drawing sheet(s) must be clearly labeled as "Annotated Sheet" and must be presented in the amendment or remarks section that explains the change(s) to the drawings.

Timing of Corrections

Applicant is required to submit acceptable corrected drawings within the time period set in the Office action. See 37 CFR 1.85(a). Failure to take corrective action within the set period will result in ABANDONMENT of the application.

If corrected drawings are required in a Notice of Allowability (PTOL-37), the new drawings **MUST** be filed within the **THREE MONTH** shortened statutory period set for

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reply in the "Notice of Allowability." Extensions of time may NOT be obtained under the provisions of 37 CFR 1.136 for filing the corrected drawings after the mailing of a Notice of Allowability.

2. The drawings are objected to because Figures 8B and 9A listed in Brief Description of Figures are missing and Figures 9 and 10 are not addressed in the Description. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the means for achieving said polytrophic expansion conditions internally in a rotary sliding vane machine as recited in claim 6 or in a displacement device, by injection of fluids therein

as recited in claim 7 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use

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thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

5. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

In line 10, "The invention can use" and line 13, "the invention can be used" contain phrases that can be implied.

Claim Objections

6. Claim 13 is objected to because of the following informalities: it does not comply with MPEP § 608.01(m) that requires each claim to begin with a capital letter and to end with a period. Periods may not be used elsewhere in the claims except for abbreviations. See *Fressola v. Manbeck*, 36 USPQ2d1211 (D.D.C. 1995). Appropriate correction is required.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 depends on itself.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 1, 2, 5 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Erickson et al. (US 6,269,644).

Erickson et al. disclose invention as claimed: method of converting moderate amounts of heat into mechanical energy at high efficiencies, including the steps of supertropically expanding a gas vapor including ammonia (Re column 3, lines 29-31)

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against a vacuum, as generated by chemisorption, in order to convert moderate amounts of heat into mechanical energy at high efficiencies.

11. Claims 8, 11-13, and 15-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Gohee (US 3,505,810).

Gohee discloses invention as claimed: a method of generating electrical power from ammonia, including the steps of heating ammonia gas, expanding the heated ammonia by an expander 3 to a larger volume while dropping temperature of the ammonia gas, rotating the shaft 14 and passing the liquid and the vapor from the receiver to an absorber 4.

The motor or the electric alternator driven by the expander is inherent to all systems generating electricity from mechanical energy produced by expanders.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Erickson et al. (US 6,269,644) in view of Smith et al. (GB 2294294A).

Erickson et al. disclose a supertropic energy generating package system including a gaseous source 102, a thermal generator 101 for heating the source of ammonia/water and generating a gas an expander 103, and a power source being driven by the expanding gas and generating electricity therefrom. However, Erickson et al. do not disclose the scroll expander.

Smith et al. disclose an expander for recovering power from two-phase fluids.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the system as taught by Erickson et al. and to provide the scroll expander as taught by Smith et al. for the purpose of recovering power from two phase fluids where significant liquid with gas mixtures being used.

Re claim 4, Erickson et al. utilize ammonia and water for re-circulating the expander exhaust fluid.

14. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Erickson et al. (US 6,269,644) in view of Edwards (US 4,738,111).

Erickson et al. disclose the device essentially as claimed. However, Erickson et al. do not disclose the rotary sliding vane machine.

Edwards discloses an expander in a form of a rotary sliding vane machine for recovering power from a low-grade energy source.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the system as taught by Erickson et al. and to provide the scroll expander as taught by Edwards for the purpose of efficiently recovering power from a low-grade energy source using low pressure refrigerants containing liquid phase.

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15. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Erickson et al. (US 6,269,644) in view of Honigmann (US 340,718).

Erickson et al. disclose the device essentially as claimed. However, Erickson et al. do not disclose the means for achieving the polytrophic expansion conditions in a displacement device by injection of fluids therein.

Honigmann discloses an expander in a form of a displacement device as means for achieving the polytrophic expansion conditions for the purpose of driving a vehicle.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the system as taught by Erickson et al. and to provide an expander in a form of a displacement device as means for achieving the polytrophic expansion conditions as taught by Honigmann for the purpose of providing efficient traction engine driving a vehicle like locomotive or a large truck.

16. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gohee (US 3,505,810).

Gohee discloses the claimed invention except for the steps of heating the ammonia to approximately 700 F at approximately 75 psi or increasing the volume of the heated ammonia gas to approximately 3.6 times its original input while dropping temperature to minus approximately 70 F.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to heat the ammonia to approximately 700 F at approximately 75 psi or to increase the volume of the heated ammonia gas to approximately 3.6 times its original input while dropping temperature to minus approximately 70 F for the purpose

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of extracting the optimum amount of energy from the available source, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

17. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gohee (US 3,505,810) in view of Cassidy (US 4,288,989) and Erickson et al. (US 6,269,644).

Gohee discloses the claimed invention except for the collected fluid being a mixture of approximately 60% liquid and approximately 40% vapor.

Cassidy discloses the collected fluid being 100% liquid.

Erickson et al. discloses the collected fluid being 7 to 10% to prevent damage in a standard turbine.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the system as taught by Gohee and to provide the fluid composition in a range between the 1, 10 and 100% liquid of as taught by Cassidy and Erickson et al. for the purpose of meet the optimum operating and equipment condition.

In re Iron Grip Barbell Company, Inc v. USA Sports, Inc., 12/14/04.

Furthermore, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Prior Art

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Waks whose telephone number is (571) 272-2037. The examiner can normally be reached on Monday through Thursday 8 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren E. Schuberg can be reached on (571) 272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Joseph Waks
Primary Examiner
Art Unit 2834

2/28/05